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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/920,575 | 07/31/2001 | Vu V. Luu | K35A0782 | 5985 |

35219 7590 07/07/2005

WESTERN DIGITAL TECHNOLOGIES, INC.
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EXAMINER

CHEN, TSE W

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2116

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/920,575

Applicant(s)

LUU ET AL.

Examiner

Tse Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment dated May 17, 2005.

2. Claims 1-12 are presented for examination.

3. The rejections are respectfully maintained and reproduced infra for Applicant's convenience.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puckette, U.S. Patent 6385721, in view of Assaf, U.S. Patent 5966732, and Bates et al., U.S. Patent 6367074, hereinafter Bates.

6. Puckette, Assaf, and Bates were cited as prior art in the previous Office Action.

7. In re claim 1, Puckette discloses a disk drive [mass storage device 30; fig.2] for use with a computer system [personal computer 10] configured to generate a command [col.9, ll.7-17; F10 command signal is generated in response to F10 key], the disk drive comprising:

- A host-accessible user partition [bootable OS partition 48] including:
 - A user partition address range [col.6, ll.19-33].
 - A host-selected operating system [OS 66; col.6, ll.64-65] stored within the user partition address range [fig.2].

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- A host-selected master boot record [boot record 46, denoted for both partitions; col.6, ll.23-25] stored within the user partition address range [fig.2], the host selected master boot record identifying the host-selected operating system [col.6, ll.63-66].
- A hidden partition [hibernation partition 50; col.6, ll.60-62; col.7, ll.3-8] independent of the host-accessible user partition [fig.2; col.6, ll.17-19; col.6, l.56 – col.7, l.8] and including:
 - A drive-selected boot record [boot record 46, denoted for both partitions; col.6, ll.23-25] stored within the hidden partition address range [fig.2], the drive-selected boot record configured to load [col.6, ll.23-26, ll.40-42] an instruction set [fully functional BIOS; col.7, ll.51-52] capable of executing an application program [utility program; col.7, l.15; col.8, ll.15-16] having a user interface [microphone or touch pad; col.8, ll.22-23] [minimal BIOS loads drive-selected boot record 46 which loads fully functional BIOS to execute the program], to execute the application program [col.8, ll.15-16, ll.20-21], to accept a user input [col.8, ll.14-24; inherently, user input of either voice or signature must be accepted in order for authentication to work], and to load an operating system configured to perform a function [col.7, ll.14-16; some form of operating system such as a simple OS is needed to run the utility programs or functions and thus, both the OS and programs are stored together].

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- At least one drive-selected operating system configurable to perform at least one function [col.7, ll.12-15, programs are used to perform some kind of function, with support from the OS].
 - A disk controller [BIOS 14] configured to receive the command [F10 command signal] from the computer system and to send the drive-selected boot record to the computer system in response to receipt of the command [col.9, ll.7-17].
- 8. Puckette did not disclose a host-inaccessible hidden partition and did not disclose explicitly an application program having a user interface for accepting a user selection identifying a user-selectable function to be performed.
- 9. Regarding the host-inaccessible hidden partition, Assaf discloses a disk drive [30] for use with a computer system [20] configured to generate a command [fig.1; col.3, ll.12-43], the disk drive comprising:
 - A host accessible user partition [tracks between 50 and 52] including a user partition address range [col.3, ll.44-68].
 - A host-inaccessible hidden partition [54] independent of the host-accessible user partition and including a hidden partition address range outside the user partition address range [col.1, l.11 – col.2, l.4; col.3, l.59 – col.4, l.16].
 - A disk controller configured to receive the command from the computer system [col.5, ll.1-54].
- 10. It would have been obvious to one of ordinary skill in the art, having the teachings of Puckette and Assaf before him at the time the invention was made, to modify the system taught by Puckette to include the host-inaccessible hidden partition as taught by Assaf, in order to

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provide the disk drive comprising at least a host-inaccessible hidden partition independent of the host-accessible user partition and including a hidden partition address range outside the user partition address range. One of ordinary skill in the art would have been motivated to make such a combination as it provides a safe and low cost way to store critical information [Assaf: col.1, 1.11 – col.2, 1.41].

11. Regarding an application program having a user interface for accepting a user selection identifying a user-selectable function to be performed, Bates discloses a computer system [system 10] with multiple partitions [fig.3; col.4, ll.59-61; non-volatile storage media such as a dedicated disk drive], the system comprising:

- An instruction set [startup or BIOS routine 404] capable of executing an application program [Quicknote routine 406; col.5, ll.16-17, the flag may be set to have Quicknote loaded instead of the usual OS] having a user interface for accepting a user selection identifying the user-selectable function to be performed [col.5, ll.58-67].

12. It would have been obvious to one of ordinary skill in the art, having the teachings of Puckette and Bates before him at the time the invention was made, to modify the system taught by Puckette to include the application program as taught by Bates, in order to provide the drive-selected boot record configured to at least load an instruction set capable of executing an application program having a user interface for accepting a user selection identifying the user-selectable function to be performed. One of ordinary skill in the art would have been motivated to make such a combination as it provides a more efficient way to access computer information. [Bates: col.1, ll.15-33].

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13. As to claim 2, Bates discloses the user interface that is a graphical user interface [col.5, ll.58-60].

14. As to claim 3, Puckette discloses the operating system that is configured to perform the user-selectable function is the drive-selected operating system [col.7, ll.12-16; the utility programs for the user-selectable function is stored with the necessary OS].

15. As to claim 4, Puckette discloses the operating system configured to perform the user-selectable function is the host-selected operating system [col.7, ll.4-8, ll.12-15; the host-selected operating system could also be MSDOS, just like the drive-selected operating system in order to provide an incorruptible backup].

16. As to claim 5, Puckette discloses the command that is a boot command [col.7, ll.26-28; F10 as used is essentially a boot command, in that it resets the computer similar to the more familiar ctrl+alt+del command].

17. As to claim 6, Bates discloses that the sending of the drive-selected boot record to the computer system by the disk controller, in response to the boot command, is a default operation [col.5, ll.20-21].

18. In re claim 7, Puckette discloses a computer system [personal computer 10] comprising:

- A disk drive [mass storage device 30; fig.2] including:
 - A host accessible user partition [bootable OS partition 48] including:
 - A user partition address range [col.6, ll.19-33].
 - A host-selected operating system [OS 66; col.6, ll.64-65] stored within the user partition address range [fig.2].

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- A host-selected master boot record [boot record 46, denoted for both partitions; col.6, ll.23-25] stored within the user partition address range [fig.2], the host selected master boot record identifying the host-selected operating system [col.6, ll.63-66].
- A hidden partition [hibernation partition 50; col.6, ll.60-62; col.7, ll.3-8] independent of the host-accessible user partition [fig.2; col.6, ll.17-19; col.6, l.56 – col.7, l.8] and including:
 - A drive-selected boot record [boot record 46, denoted for both partitions; col.6, ll.23-25] stored within the hidden partition address range [fig.2].
- A host computer [personal computer 10] coupled to the disk drive [30] [col.6, ll.4-8] and including:
 - A host processor [cpu 40] configured to generate a command [f10] to read the host-selected master boot record [col.5, l.62 to col.6, l.4; col.6, ll.12-14; col.9, ll.7-14; F10 command is relayed to the I/O bus then to CPU which generates the associated signal to read the master boot record].
 - A host memory [BIOS 14] configured to load the drive-selected boot record to define a loaded drive-selected boot record, after the disk drive receives the command [col.5, ll.60-62; col.9, ll.7-10].
 - The host processor configured to execute the loaded drive-selected boot record [col.5, ll.62-66], the drive-selected boot record configured to load [col.6, ll.23-26, ll.40-42] an instruction set [fully functional BIOS; col.7, ll.51-52] capable of executing an application program [utility program; col.7, l.15; col.8, ll.15-16]

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having a user interface [microphone or touch pad; col.8, ll.22-23] [minimal BIOS loads drive-selected boot record 46 which loads fully functional BIOS to execute the program], to execute the application program [col.8, ll.15-16, ll.20-21], to accept a user input [col.8, ll.14-24; inherently, user input of either voice or signature must be accepted in order for authentication to work], and to load an operating system configured to perform a function [col.7, ll.14-16; some form of operating system such as a simple OS is needed to run the utility programs or functions and thus, both the OS and programs are stored together].

19. Puckette did not disclose a host-inaccessible hidden partition and did not disclose explicitly an application program having a user interface for accepting a user selection identifying a user-selectable function to be performed.

20. Regarding the host-inaccessible hidden partition, Assaf discloses a disk drive [30] for use with a computer system [20] configured to generate a command [fig.1; col.3, ll.12-43], the disk drive comprising:

- A host accessible user partition [tracks between 50 and 52] including a user partition address range [col.3, ll.44-68].
- A host-inaccessible hidden partition [54] independent of the host-accessible user partition and including a hidden partition address range outside the user partition address range [col.1, l.11 – col.2, l.4; col.3, l.59 – col.4, l.16].
- A disk controller configured to receive the command from the computer system [col.5, ll.1-54].

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21. It would have been obvious to one of ordinary skill in the art, having the teachings of Puckette and Assaf before him at the time the invention was made, to modify the system taught by Puckette to include the host-inaccessible hidden partition as taught by Assaf, in order to provide the disk drive comprising at least a host-inaccessible hidden partition independent of the host-accessible user partition and including a hidden partition address range outside the user partition address range. One of ordinary skill in the art would have been motivated to make such a combination as it provides a safe and low cost way to store critical information [Assaf: col.1, 1.11 – col.2, 1.41].

22. Regarding an application program having a user interface for accepting a user selection identifying a user-selectable function to be performed, Bates discloses a computer system [system 10] with multiple partitions [fig.3; col.4, ll.59-61; non-volatile storage media such as a dedicated disk drive], the system comprising:

- An instruction set [startup or BIOS routine 404] capable of executing an application program [Quicknote routine 406; col.5, ll.16-17, the flag may be set to have Quicknote loaded instead of the usual OS] having a user interface for accepting a user selection identifying the user-selectable function to be performed [col.5, ll.58-67].

23. It would have been obvious to one of ordinary skill in the art, having the teachings of Puckette and Bates before him at the time the invention was made, to modify the system taught by Puckette to include the application program as taught by Bates, in order to provide the drive-selected boot record configured to at least load an instruction set capable of executing an application program having a user interface for accepting a user selection identifying the user-selectable function to be performed. One of ordinary skill in the art would have been motivated

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to make such a combination as it provides a more efficient way to access computer information.

[Bates: col.1, ll.15-33].

24. As to claim 8, Puckette, Assaf and Bates disclose each and every limitation of the claim as discussed above in reference to claims 2 and 7.

25. As to claim 9, Puckette, Assaf and Bates disclose each and every limitation of the claim as discussed above in reference to claims 3 and 7.

26. As to claim 10, Puckette, Assaf and Bates disclose each and every limitation of the claim as discussed above in reference to claims 4 and 7.

27. As to claim 11, Puckette, Assaf and Bates disclose each and every limitation of the claim as discussed above in reference to claims 5 and 7.

28. As to claim 12, Puckette, Assaf and Bates disclose each and every limitation of the claim as discussed above in reference to claims 6 and 7.

Response to Arguments

29. Applicant's arguments filed May 17, 2005 have been fully considered but they are not persuasive.

30. Applicant alleges that "boot record 46 in the hibernation partition 50 disclosed by Puckette is not drive-selected as recited in the claims, rather, the boot record 46 is host-selected... the host computer system 10 selects the boot record 46 from either the bootable OS partition 48 or the hibernation partition 50... as conceded by the examiner on page 4 of the office action, Puckette discloses at col. 9, ll. 1-17, that the *BIOS 14 of the host computer system 10* selects the appropriate boot record 46 in response to a command received from the user (e.g., pressing the F10 key)". Firstly, as Applicant did not specifically distinguish the claim language

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“drive-selected” from the teachings of Puckette, or distinguish the functions of “drive-selected” from “host-selected” in any ways [i.e., why would Puckette be considered host selected], Examiner’s position is that boot record 46 in the hibernation partition 50 disclosed by Puckette is drive-selected [part 6 of previous Office Action; boot record is selected by the drive in order to perform the specified functions]. Examiner submits that the disk drive inherently performs a selection when commanded by the computer system. Even if “the host computer system 10 selects the boot record 46 from either the bootable OS partition 48 or the hibernation partition 50”, the disk drive would still be considered to be selecting the boot record 46 from either the bootable OS partition 48 or the hibernation partition 50 [i.e., without a selection from the disk drive where the boot record resides, there would be no boot record]. Secondly, Examiner respectfully submits that Applicant misconstrued Examiner’s position on page 4 of the previous Office Action as Examiner did not specifically link BIOS 14 to be “of the host computer system 10”. Examiner’s position is that BIOS 14 is to be considered part of the disk drive [mass storage device 30].

31. Applicant alleges that “in contrast to Puckette, claim 1 recites that the disk controller within the disk drive...”. However, Examiner was not able to locate the specific claim language that stipulates the disk controller is to be “within the disk drive” or any structural relations that would effect such limitation.

32. Applicant alleges that “in one embodiment, the host sends a conventional boot command to the disk drive requesting the master boot record (host-selected boot record), and in response to this command the disk controller 31 instead returns an alternate or drive-selected boot record”. However, Examiner was not able to locate the specific claim language that stipulates this specific

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embodiment in the claim and notes that the features upon which applicant relies (i.e., selecting an alternate boot record) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

33. Applicant alleges that “Puckette clearly shows in FIG. 1 that the BIOS 14 is part of the host computer 10 and not included in the disk drive (mass storage device 30)...” Examiner respectfully submits that Puckette clearly shows in figure. 1 that BIOS 14 is part of the disk drive (mass storage device 30) [in order for boot record to be selected], and both are included in computer system 10.

34. As demonstrated above, Applicant's arguments are not persuasive and the rejections are respectfully maintained.

35. All other claims were not argued separately.

Conclusion

36. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (571) 272-3672. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tse Chen
June 27, 2005


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